

## Village of Antioch Public Water Supply 2004 Water-Quality Report

Our goal is to provide you with high-quality safe drinking water that exceeds every federal and state standard. As mandated by the Safe Drinking Water Act (SDWA), this "Consumer Confidence Report" details our water sources, the results of our water tests and other information. To see a copy of this report and find out more about the Village of Antioch, access the Internet at [www.antioch.il.gov](http://www.antioch.il.gov).

### **Source of Drinking Water**

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and groundwater wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material and can pick up substances resulting from the presence of animals or from human activity.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791

Water for the Village of Antioch is pumped from six groundwater wells. These wells are located at different areas throughout the Village limits. Water is pumped from aquifers located at depths ranging from 147 to 247 feet below the surface of the ground.

During 1996, a source-water assessment was completed for the Village of Antioch by the Illinois Environmental Protection Agency. Copies are available from the IEPA 1021 North Grand Avenue East, P.O. Box 19276, Springfield, IL 62794-9276.

### **Contaminants that May Be Present in Water:**

**Microbial Contaminants** – such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.

**Inorganic Contaminants** – such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial, or domestic wastewater discharges, oil and gas production, mining or farming.

**Pesticides and Herbicides** – which may come from a variety of sources such as agriculture, urban storm water runoff and residential uses.

**Organic Chemical Contaminants** – including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and can, also, come from gas stations, urban storm water runoff and septic systems.

**Radioactive Contaminants** – which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as person with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available for the Safe Drinking Water Hotline (800) 426-4791.

### **Source Water Assessment Availability**

Based on information obtained in a Well Site Survey published in 1990 by the Illinois EPA, sixty-two potential sources or possible problem sites were identified within the survey area of Antioch's wells. Furthermore, information provided by the Leaking Underground Storage Tank and Remedial Project Management Sections of the Illinois EPA indicated several additional sites with ongoing remediation, which may be of concern.

The Illinois EPA has determined that the Antioch's wells # 1, #2, #3, #5 and #6 source water is not susceptible to contamination. However, the source water obtained from well #7 is susceptible to contamination. This determination is based on a number of criteria including: monitoring conducted at the wells, monitoring conducted at the entry point to the distribution system and the available hydro geologic data on the wells. The Illinois Environmental Protection Act provides minimum protection zones of 200 feet for all of Antioch wells, except well #7, which has a minimum protection zone of 400 feet. The Illinois EPA regulates these minimum protection zones.

To further minimize the risk to the groundwater supply, the Illinois EPA recommends that six additional activities be assessed. First, the Village may wish to enact a "maximum setback zone" ordinance to further protect their water supply. Their ordinances are authorized by the Illinois Environmental Protection Act and allow county and municipal officials the opportunity to provide additional protection up to a fixed distance, normally 1,000 feet, from their wells. The Village properly abandoned and sealed the inactive well #4. Inactive wells that are not properly abandoned can act as direct conduits for surficial contaminants in the aquifer and are considered "routes" under the Environmental Protection Act. Third, the water supply staff may wish to revisit their contingency planning documents. Contingency planning documents are a primary means to ensure that through emergency preparedness, the Village will minimize their risk of being without safe and adequate water. Fourth, the water supply staff is encouraged to review their cross connection control program to ensure that it remains current and viable. Cross connections to either the water treatment plant (for example, at bulk water loading stations) or in the distribution system may negate all source water protection initiatives provided by the Village. Fifth, the village should obtain aquifer property data and groundwater flow direction information so the recharge areas for well #7 can be mapped. This information can be obtained by completing pump tests and mass water level measurements on wells finished in the aquifer utilized by well #7. Finally, the Illinois EPA recommends that the Village investigate additional source water protection management options to address land use activities within the recharge areas of well #7. Specifically, these management options must include potential impacts from point and non-point sources of groundwater contamination.

### **Definition of Terms**

**Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below, which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**Action Level Goal (ALG):** The level of a contaminant in drinking water below, which there is no known or expected risk to health. ALG's allow for a margin of safety.

**Action Level (AL):** The concentration of a contaminant that, if exceeded, triggers treatment or other requirements, which a water system must follow.

**ppm:** Parts per million

**ppb:** Parts per billion

**pCi/L:** picoCuries per liter (measurement of radioactivity)

**Note:** The state requires monitoring of certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. Therefore, some of this data may be more than one year old.

## Regulated Contaminants Detected in 2004 (Collected in 2004 unless noted)

Coliform Bacteria						
MCLG	Total Coliform MCL	Highest # of Positive Total Coliform Samples in any month	Fecal Coliform or E. Coli MCL	Total # of Positive E. Coli or Fecal Coliform Samples	Violation	Likely Source of Contamination
0	1 positive monthly sample	1	A routine sample and a repeat sample are total coliform positive and one is also fecal coliform or E. Coli positive	0	No	Naturally present in the environment

Lead and Copper – Date Sampled: 08/22/2003								
Lead MCLG	Lead AL	Lead 90 <sup>th</sup> Percentile	# Sites Over Lead AL	Copper MCLG	Copper AL	Copper 90 <sup>th</sup> Percentile	# Sites Over Copper AL	Likely Source of Contamination
0 ppb	15 ppb	7 ppb	1	1.3 ppm	1.3 ppm	.666 ppm	0	Corrosion of household plumbing system; Erosion of natural deposits

Regulated Contaminants	Highest Level Detected	Range of Levels Detected	Unit of Measurement	MCLG	MCL	Violation	Likely Source of Contamination
<b>Inorganic Contaminants</b>							
Arsenic <sup>1</sup>	5.5	2.4-5.5	ppb	N/A	10	No	Erosion of natural deposits; Runoff from orchards; Runoff from electronics production wastes
Barium	0.091	0.032-0.091	ppm	2	2	No	Discharge from drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride	0.88	0.76-0.88	ppm	4	4	No	Erosion of natural deposits; Water additive which promotes strong teeth; Fertilizer discharge
Selenium	1.8	1.1-1.8	ppb	50	50	No	Discharge from petroleum and metal refineries; erosion of natural deposits
<b>Radioactive Contaminants</b>							
Alpha Emitters (04/10/2002)	1.3	N/A	pCi/L	0	15	No	Erosion of natural deposits
<b>State Regulated Contaminants</b>							
Iron <sup>2</sup>	1400	.022 –1400	ppb	N/A	1000	No	Erosion from naturally occurring deposits
Manganese <sup>2</sup>	16	3.8-16	ppb	N/A	150	No	Erosion of naturally occurring deposits
Sodium <sup>3</sup>	48	30-48	ppm	N/A	N/A	No	Erosion of naturally occurring deposits, used in water softener regeneration
Zinc	8	6.6-8	ppb	N/A	5000	No	Naturally occurring; discharge from metal factories

<sup>1</sup> EPA has reviewed the drinking water standard for arsenic because of special concerns that it may not be stringent enough. Arsenic is a naturally occurring mineral known to cause cancer in humans at high concentrations.

<sup>2</sup> This contaminant is not currently regulated by the USEPA. However, the state has set an MCL for this contaminant for supplies serving a population of 1000 or more.

<sup>3</sup> There is not a state or federal MCL for sodium. Monitoring is required to provide information to consumers and health officials that are concerned about sodium intake due to dietary precautions. If you are on a sodium-restricted diet, you should consult a physician about this level of sodium in the water.